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ABSTRACT

Summarized are the results of efforts exerted by the Puerto Rico Research Coordinating Unit to expand the Puerto Rico research capability in vocational education by: (1) identifying relevant legislation and its historical antecedents, (2) identifying the administrative structure responsible for conducting research in occupational education, (3) exploring and identifying resources and materials available for research and development, (4) developing skills fundamental in identifying research problems, and (5) developing competencies in proposal writing. A total of twenty educational professionals in key leadership positions participated in the 3-component project which includes: a research development seminar, tutorial sessions, and evaluations. Findings indicate that the project's success can be attributed largely to the quality of the administrative personnel, intensive planning, and balanced coordination. (SN)

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The Development of Research Capabilities of Key Puerto Rico Professionals in Vocational-Technical Education

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THE DEVELOPMENT OF RESEARCH CAPABILITIES OF KEY PUERTO RICO PROFESSIONALS IN VOCATIONAL – TECHNICAL EDUCATION

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January 1972

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January 26, 1972

Dr. Maria Socorro Lacot
Assistant Secretary
Vocational and Technical Education
Department of Education (Puerto Rico)
P. O. Box 818
Hato Rey, Puerto Rico 00919

Dear Dr. Lacot:

In fulfillment of an agreement dated June 29, 1970 between the Department of Education, Puerto Rico and the Center for Field Research and School Services, I am pleased to submit thirty copies of a report entitled, Development of Research Capabilities of Key Puerto Rico Professionals in Vocational-Technical Education.

The Department of Education in Puerto Rico deserves commendation for establishing a cooperative relationship which made it possible to complete this significant project. Unquestionably, this project was an invaluable endeavor to assist Puerto Rico Professionals in Occupational Education in the Development of their research capabilities. Obviously, all recommendations in this report are not equally viable. Final decisions, moreover, are always the prerogative of constituted authority rather than of a consulting team, regardless of the latter's expertise. To this end, the author is prepared to assist with the presentation and interpretation of the report.

New York University and its Center for Field Research and School Services look forward to a continued association with the Puerto Rico Department of Education in this important evaluation.

Respectfully submitted,

Arnold Spinner

ARNOLD SPINNER
Director

AS:jh

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BACKGROUND

Prior to enactment of the Vocational Education Act of 1963, the dearth of research capabilities in vocational-technical education was a chronic problem in the United States; Puerto Rico was no exception to this rule. The first major effort to deal with the problem was initiated when federal funds were made available for research related activities in vocational-technical education under the Vocational Education Act of 1963 and the 1968 amendments of that act. One of the first major programs developed by the United States Office of Education under the Act was the establishment of a Research Coordinating Unit (RCU) in each of the states and political affiliates of the United States. The purposes of the RCUs as defined by the U. S. Office of Education are to stimulate, promote and coordinate vocational-technical education research and development activities and to create and expand systems for the dissemination of information in vocational-technical education. As part of its total program the Puerto Rico RCU contracted with New York University to develop broad research competencies in a group of key Puerto Rico professionals in vocational-technical education. This is the final report of that project.

PURPOSE AND OBJECTIVES

The general purpose of the project was to contribute toward the efforts of the Puerto Rico RCU to expand the Puerto Rico research capability in vocational-technical education; in this instance by training key Puerto Rico professional educators. The project director and the RCU director agreed that the most pragmatic objective to set was the development of proposals for applied research which when implemented would contribute to the improvement of vocational-technical education in Puerto Rico. The attainment of the following objectives were necessary for the successful development of such proposals:

1. Identification of the legislation and its historical antecedents most relevant to the promotion of research and development in occupational education.

2. Identification and consideration of the administrative structure responsible for the implementation of research and development in occupational education from the Federal to the Commonwealth level.

3. Exploration and identification of resources and materials available for research and development in occupational education from the Federal to the Commonwealth level.

4. The development of skills fundamental to the identification and specification of research problems.

5. The development of skills in proposal writing.

PARTICIPANTS

The project included twenty key Puerto Rico educational professionals who had been identified by the Puerto Rico Department of Education as having shown the interest and aptitude necessary for the development of skills fundamental to the identification of research problems, the design and implementation of research studies, and the development of research proposals. Thirteen of the participants held assignments at Department of Education headquarters in Hato Rey; eight of these were members of the Area for Vocational and Technical Education while five were assigned to the Department's new evaluation unit. Seven of the participants were assigned to regional offices; only two of the seven had assignments or backgrounds in occupational education. Table 1 shows the occupational titles of the participants.

TABLE 1

Occupational Titles of Seminar Participants

Occupational Title	N
Educational Researcher	6
Curriculum Technician	6
General Supervisor	5
Assistant Superintendent of Schools	1
Adult Education Coordinator	1
Educational Planner	1
Total	20

METHOD

The project included three major components: a research development seminar offered to the total group for which three graduate credits could be earned; subsequent individual tutorial sessions; an evaluation component.

Research Development Seminar. From July 6, 1970 to July 17, 1970, the total group participated in an intensive seminar. The first week was devoted to the acquisition of knowledge considered necessary for developing sound research proposals. The second week was conducted as a concentrated workshop in proposal writing.

In meeting Objective #1 the group studied the legislation and related literature relevant to occupational education research and development, i.e., the Vocational Education Act of 1963, the 1968 Vocational Education Amendments and the Manpower Development and Training Act. The basic reference for this unit was Vocational Education: The Bridge Between Man and His Work, Office of Education, OE 80052. See Appendix A for the complete seminar reading list.

Objective #2 was met by a study of the role of the U. S. Office of Education in occupational research and development, the research coordinating unit concept, the Puerto Rico State Plan for occupational education and by an invited address from the Puerto Rico RCU director.

In meeting Objective #3 sources of information in occupational education were studied at both the Federal and

Commonwealth levels. Studies at the Federal level covered the structure, function and materials of the Educational Resources Information System, the specialized clearinghouses of the U. S. Office of Education and the U. S. Department of Commerce, and the major national research and development centers. Exploration of information on occupational education in Puerto Rico was conducted by an invited address from the RCU director and an evaluation of the Puerto Rico RCU resources by the seminar participants.

The groundwork for meeting objectives #4 and #5 was laid during the second week of the seminar which consisted of an intensive workshop in proposal writing. Seminar participants learned the general characteristics of proposals and the specific guidelines for submitting proposals to the Puerto Rico RCU. Special emphasis was given to the development of project budgets; a specific fiscal frame of reference was provided in one seminar conducted by a Department of Education finance officer. During the final week of the seminar, all participants applied their learnings to the identification of a real problem and the development of the first draft of a proposal; all twenty participants submitted their first efforts at the termination of the seminar.

Tutorial Sessions. The original plan had called for the project director to hold eight small group workshops from August to December of 1970. Since the first drafts of the proposals represented such a variety of needs for further development, the project director and the RCU director agreed that the format should be changed to individual tutorial sessions. Detailed

editing and written evaluations of the first drafts of the proposals, along with recommendations for inclusion in the second drafts, were forwarded to the seminar participants in September of 1970. In March and April of 1971 the Project Director met in Puerto Rico with eleven of the participants who had submitted second drafts of their proposals. The six month intervening period is not too long when one considers the differential rate at which project participants developed their proposals, the fact that most had to squeeze their writing efforts into their regularly assigned duties, and the problems of scheduling mutually convenient times between the project director based in New York City and project participants based throughout Puerto Rico. Three of the proposals were of such sufficient quality that the third drafts were officially submitted directly to the RCU. The remainder showed considerable improvement over the first drafts. Recommendations were made for incorporation into third drafts which were to be discussed at subsequent tutorial sessions. On October 8, 1971 the project director visited Puerto Rico at which time he evaluated eight (third draft) proposals and discussed bringing the project to a close with the RCU director. All eight proposals showed considerable improvement and it was recommended that the final drafts be submitted directly to the RCU. The titles of the eleven proposals formally submitted to the RCU are listed in Appendix B.

Evaluation. Evaluations were conducted by both the project director and the project participants. The participants were asked to complete an exercise which required that they use the information resources of the RCU (Appendix C). Question #3 of that exercise elicited recommendations for the improvement of the RCU information resource capability. A content analysis of the recommendations were conducted independently by a research psychologist and included in a report to the RCU director (Appendix D).

Project participants evaluated the Research Development Seminar via an anonymous questionnaire which was administered on the last day of the two week seminar (Appendix E). The questionnaire items were written to correspond to the project objectives.

EVALUATION AND RECOMMENDATIONS

Research Development Seminar. The heart of the project was the Research Development Seminar. It was here that the foundation was laid for the subsequent development of competent proposals. Failure here would have meant failure of the entire project. It is indeed gratifying, then, that the two week seminar was apparently highly successful as indicated by the responses to the questionnaire by participants (Table 2), the project director's impressions, and feedback from Department of Education officials.

TABLE 2

Responses of Project Participants to Seminar Evaluation Questionnaire

	Very Inter.	Inter.	Un-inter.	Very Un-inter.	Total
1. How interesting was the seminar?	11	8	-	-	19
2. How interesting were each of the following parts of the seminar?					
General Background:					
Lectures on Legislation	11	8	-	-	19
Lectures on U.S. Office of Educ.	10	9	1	-	20
Lectures on RCU's	14	6	-	-	20
Exercise #1	18	2	-	-	20
Sources of Information:					
Lectures on ERIC	8	5	-	-	13
Lectures on sources of information in Puerto Rico	9	9	2	-	20
Exercise #2 (Matching Question)	10	10	-	-	20
Proposal Writing:					
Lectures on Proposal Writing	13	6	-	-	19
Exercise #3 (Bibliographies)	12	6	2	-	20
Exercise #4 (First Draft of Proposal)	15	5	-	-	20

	Very Useful	Useful	Useless	Very Useless	Total
3. How useful was the seminar?	15	5	-	-	20
4. How useful was each of the following parts of the seminar:					
General Background:					
Lectures on laws	10	9	-	-	19
Lectures on U.S. Office of Educ.	12	7	-	-	19
Lectures on RCU's	14	5	-	-	19
Exercise #1	14	6	-	-	20
Sources of Information:					
Lectures on ERIC	13	5	-	-	18
Lectures on sources of information in Puerto Rico	11	8	1	-	20
Exercise #2 (Matching Question)	7	12	-	-	19
Proposal Writing:					
Lectures on Proposal Writing	15	4	-	-	19
Exercise #3 (Bibliographies)	14	5	1	-	20
Exercise #4 (First Draft of Proposal)	17	3	-	-	20

Two items of the questionnaire evoked responses concerning the general overall interest (question #1) and usefulness (question #3) of the seminar. Responses to these items indicated that all respondents found the seminar both interesting and useful. The remaining items evoked judgments concerning both the interest and usefulness of specific parts of the seminar experience. Again, every single seminar activity was found to be both interesting and useful. Out of a total of 191 interest responses, 120 were "Very Interesting", 66 were "Interesting" and only five were "Uninteresting"; there were no "Very Uninteresting" responses. Out of a total of 193 utility responses, 127 were "Very Useful", 64 were "Useful" and only two were "Useless"; there were no "Very Useless" responses.

The project director had evaluated the seminar before the results of the questionnaire had been tabulated and had also come to the independent conclusion that the seminar had been a success as indicated in the following excerpt from the first progress report submitted to the Puerto Rico RCU.

> "In the judgment of the project director, the seminar was a success. The best single indicator was that every participant completed the first draft of a proposal. The success of the seminar was due in large part to four major factors: 1) the unusual dedication and hard work of the seminar participants 2) the resource materials available in the Puerto Rico RCU 3) instructional facilities in the Department of Education close to the RCU resource center and 4) the unstinting cooperation of the RCU director."

Since all the seminar participants chose to earn three graduate credits from New York University, appropriate work

demands were made upon them. The project director would not hesitate to recommend that similar seminars for graduate credit be held at the Department of Education facility but with modifications: one credit should be offered for one week of work and the work load assigned accordingly. While the participants apparently achieved seminar objectives, it was accomplished at too high a price. Most students reported that there was insufficient time to cover all aspects of the seminar without major personal sacrifice. Many reported that they were unable to retire in the evening before three, four and often five o'clock in the morning. It is unwise and unreasonable for individuals to risk their health this way.

Tutorial Sessions. In our judgment the individual tutorial approach as a method proved successful with the eleven participants who continued beyond the Research Development Seminar and met in individual tutorial sessions. All eleven developed final proposals of sufficient quality to warrant the recommendation that they be submitted formally to the RCU for support.[1] Eight of the participants did not continue their involvement beyond the seminar. The reason for their lack of continued participation will be discussed below. However, the point should be made here that their discontinuance was unrelated to the tutorial method.

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[1] The project director worked briefly with a twelfth participant who was developing a data collection and reporting system. However, the language barrier proved too great to permit him to be of any significant assistance.

General. In general, the project was apparently highly successful for those most closely associated with the field of occupational education. As of October, 1971, four of the eleven final proposals submitted had been approved by the RCU pending the availability of funds; two were nearing completion of evaluation and were considered to be promising, and five were in the early stages of evaluation. When one considers that almost all of the participants had no experience in proposal writing prior to this project, it may be safe to conclude that this accomplishment alone warrants evaluating the project as successful. Seven of the eleven who submitted final proposals were assigned to the Area for Vocational and Technical Education. Of the remaining four who were assigned to the educational regions, one had a background in occupational education. By contrast, only two of the nine who did not submit final proposals had backgrounds in occupational education.

It is not possible for us to determine why the eight participants not associated with the Area for Vocational and Technical Education did not continue after the Research Development Seminar. Perhaps their professional self-concepts were incompatable with working in the occupational area. Or perhaps for five of them assignment to the newly formed Department evaluation unit demanded full time and attention. At any rate, feedback from the RCU director indicated that these participants had found their seminar experience rewarding, an opinion supported by the results of the seminar evaluation questionnaire.

Whatever the reasons might be, it is rather unfortunate that these eight participants were unable to develop their proposals beyond the first drafts. Many of them presented ideas that might benefit children in the Puerto Rico school system if carried to fruition. Appendix F lists the titles of those proposals which were not developed beyond first drafts.

In addition to the above, there is further fragmentary evidence which indicates the positive influence of the project. Non RCU participants have continued to use the RCU as a source of information. Information resources of the RCU have improved and plans are underway for the development of an occupational education newsletter. Several participants have continued the formal graduate education initiated in the Research Development Seminar. A more positive attitude toward occupational education seems to have developed in many of the participants who identify with other educational areas which suggests that mixing professionals with different backgrounds in projects is one way of promoting better understanding within the Department.

In bringing this report to a close we would like to emphasize some points which we feel were uniquely important to the success of the project. The project director's experience as a former RCU director facilitated his understanding of the context in which the project was conceived and implemented. The arrangement by which the project director and RCU director planned together, from the beginning to the end of the project, proved to be far superior to the more usual model of the detached outside expert since it permitted a flexible focus

on pragmatic concerns. We recommend that the cooperative approach be utilized in the future whenever possible.

APPENDIX A

SELECTED REFERENCES

Vocational Education Act

The Vocational Education Act of 1963. U.S. Department of Health, Education and Welfare, Office of Education, United States Government Printing Office, Washington: 1965, OE-80034.

Administration of Vocational Education: Rules and Regulations: U.S. Department of Health, Education and Welfare, Office of Education, United States Government Printing Office, Washington: 1967, OE-80017-A.

The Vocational Education Amendments of 1968. U.S. Office of Education, Bureau of Adult, Vocational and Library Programs, February 1969.

The Vocational Education Amendments of 1968. U.S. Department of Health, Education and Welfare, Office of Education, United States Government Printing Office, Washington: 1969, OE-80064.

Learning for Earning: New Opportunities for Paycheck Education. U.S. Department of Health, Education and Welfare, Office of Education, United States Government Printing Office, Washington: 1969, OE-80063.

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Program Development

A Guide for the Development of Curriculum in Vocational and Technical Education. Division of Vocational Education, University of California, Los Angeles, California: June, 1969.

A Guide to the Development of Vocational Education Programs and Services for the Disadvantaged. National Committee on Employment of Youth, New York: October, 1969.

A Guide for the Development, Implementation, and Administration of Exemplary Programs and Projects in Vocational Education. Georgia Department of Education and Georgia State University, Atlanta: September, 1969.

A Guide for the Development of Residential Vocational Education. Oklahoma State University of Technical Training, Okmulgee, Oklahoma: May 15, 1969.

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Minear, L. P. "A Piece of the Action", American Education, Vol. 5, No. 3, March 1969, 4-6.

Russo, Michael. "14 Million Vocational Students by 1975", American Education, Vol. 5., No. 3, March 1969, 10-11.

APPENDIX B

PROPOSALS FORMALLY SUBMITTED TO THE PUERTO RICO RCU BY PROJECT PARTICIPANTS

1. Agostini de Ortega, Candida. Vocational Training and Placing of the Unemployed Blind: A Community Based Model.
2. Antongiorgi Vega, Virginia. Nature and Characteristics of Secondary School Vocational Students in the San Juan Educational Region.
3. Cruz Capelos, Nicasio. The Development of a Computerized Reference Index for Vocational and Technical Education Periodical Literature.
4. Cubero, Andres V. A Study of the Basic Spanish Vocabulary Used in Written Business Communications.
5. Dalmau, Mirtha S. A Community Survey in Selected Deprived Areas of Puerto Rico for Planning of Vocational Programs in the Fields of Distribution and Marketing Education.
6. Martinez Arroyo, Iris A. Pilot Program in Vocational Elementary Guidance in the Santa Isabel Demonstration School District.
7. Ortega Delgado, Jose A. Identification of the Nature and Extent of the Attitudes of School Principals Toward Vocational Education.
8. Rodriguez Colon, Miguel A. The Development of Technical and Professional Competency in the Implementation of a New Curriculum in the Area of Manufacturing in the Puerto Rican Junior High Schools.
9. Sanabria Rozada, Reinaldo. In-Service Training Program for Teacher Coordinators of Distributive and Marketing Vocational Education.
10. Torres de Cantres, Noelia. Enrichment of the Business Education Curriculum Through a Reorganization of the Office Practice Course and the Cooperative Work Experience Program.
11. Torres Villafane, Fe. The Development of a Total Occupational Education System in 35 School Districts Classified as Deprived Areas.

APPENDIX C

EXERCISE COMPLETED BY SEMINAR PARTICIPANTS WHICH ELICITED RECOMMENDATIONS FOR IMPROVEMENTS OF RCU RESOURCE CAPABILITY.

EXERCISE # 3

1- Select one of the problems you identified in #3 of Exercise # 1. Using the resource material in the Puerto Rico RCU, compile an annotated bibliography of research related to how aspects of the problem have been dealt with throughout the nation.

2- Again using the resource material in the Puerto Rico RCU, compile an annotated bibliography of research related to how aspects of the problem have been dealt with in Puerto Rico.

3- As a result of your experiences in compiling 1 and 2 above, submit recommendations for the improvement of the information resource capability of the Puerto Rico RCU.

APPENDIX D

Recommendations for Improvement of the Information Resource Capability of the Puerto Rico RCU

A Research Development Seminar was offered in Puerto Rico from July 6 to July 17 by New York University as part of a training program requested by the Puerto Rico research coordinating unit (RCU). One of the seminar exercises required students to compile an annotated bibliography using the resources of the RCU. Since the RCU resource center is in the first stages of development, the RCU director and the project director felt that the experiences of the seminar participants in completing their assignment would serve as a useful basis for recommending improvements of the resource center. The seminar participants were asked to make such recommendations. What follows is an analysis of their comments. Part I is a narrative report of their recommendations. Part II presents the statistical summaries on which the narrative report is based.

PART I

I. The greatest number of recommendations were for the purchase of literature, and the single item most frequently requested was a copy of the Thesaurus, published by Central Eric (4 individuals). There were two requests for more copies of current issues of RIE, and one for the Encyclopedia of Educational Research. One suggested obtaining copies of AVJ, SS, AIVE, JIT and other professional publications.

Within content areas, the largest number of requests for literature concerned the general fields of guidance and counseling (4 individuals with 13 requests). The fields of business education (2 individuals with 17 requests) and industrial arts (2 students with suggestions of 13 titles) engendered the next largest amount of interest.

Seven students each suggested acquisitions in the following areas:

Educational statistics, distributive education, cosmetology and confectionary trades, mental retardation, environmental influences on occupational choice, technical education, and prospects for the future in the Puerto Rico labor market.

One student bemoaned the lack of literature available on the disadvantaged, while another commented on what "a lot of information" she had found on the topic!

II. The second largest category of recommendations (11) involved improving the physical facilities of the library; three of the students specified lack of space, one suggested acquisition of another reader-printer and one of a Xerox or duplicating machine. There were two requests for an indexing system which specifies where an item could be located.

III. Nine students expressed need for information about schools, programs, and research specific to Puerto Rico (these are in addition to requests for purchase of literature on the subject).

The data strongly suggests need for sharing knowledge of ongoing research in Puerto Rico.

The majority of these recommendations mentioned "improving communication" among schools and agencies in Puerto Rico. Of these, three specified coordination between all vocational programs in Puerto Rico and the RCU so that materials and information on each program will be available through the RCU. It was suggested that a representative from each program area keep the RCU informed of information and literature in his area.

Three individuals recommended that the RCU take an active role in compiling and disseminating information about research being done in Puerto Rico. One of these suggested that the RCU create questionnaires to collect data from the schools; another suggested that the RCU compile and disseminate the research work.

Of the remaining three individuals who suggested information be obtained about Puerto Rico, one specified need for data on technical schools, one for distributive education and one for vocational education guidance programs.

IV. The next general category of recommendations is closely aligned to the previous one in its stress on communication: four individuals suggested establishment of a dissemination system to acquaint concerned personnel with materials available in the RCU.

V. There were four recommendations for appointing a librarian.

VI. Three individuals suggested that the center prepare lists of publications; two of these specified a frequent listing of new materials received by the center.

PART II

I. Purchase of literature

A. General reference works

1. THEASAURUS (4)
2. RIE (2)
3. Encyclopedia of Educational Research (1)
4. AVJ, SS, AIVE, KIT & other professional pubs. (1)

B. Specific fields

1. Guidance and counseling (4 students with 13 requests)
2. Business education (2 students with 17 requests)
3. Industrial arts (2 students with 13 requests)
4. Educational statistics (1)
5. Distributive ed. (1)
6. Cosmetology and confectionary trades (1)
7. Mental retardation (1)
8. Environmental influences on occupational choice (1)
9. Technical ed. (1)
10. Prospects for Puerto Rico labor market (1)
11. Disadvantaged (1)

II. Improving the physical facilities of the library (11)

A. Lack of space (3)

B. Acquire another reader-printer (1)

C. Acquire a duplicating machine (1)

D. Indexing system specifying location of items (2)

E. General improvement (4)

III. Information specific to Puerto Rico (9)

A. Coordination between vocation programs in Puerto Rico and the RCU. (3)

B. Compile and disseminate information about research being done in Puerto (3)

C. Acquire additional information

1. Technical schools (1)

2. Distributive ed. (1)

3. Vocational education guidance programs (1)

IV. Develop a dissemination system (4)

V. Appoint a librarian (3)

VI. Prepare lists of publications

APPENDIX E

QUESTIONNAIRE USED BY PARTICIPANTS TO EVALUATE
RESEARCH DEVELOPMENT SEMINAR

EVALUATION OF SEMINAR

In order for the instructor to get feedback on the success of the seminar, it would be appreciated if you would complete the following items. Please do not write your name on the paper.

		Very Interesting	Interesting	Uninteresting	Very Uninteresting
1. How interesting was the seminar?		1	2	3	4
2. How interesting were each of the following parts of the seminar?					
General Background:	Lectures on Legislation	1	2	3	4
	Lectures on U. S. Office of Education	1	2	3	4
	Lectures on RCU's	1	2	3	4
	Exercise #1	1	2	3	4
Sources of Information:	Lectures on ERIC	1	2	3	4
	Lectures on sources of information in Puerto Rico	1	2	3	4
	Exercise #2 (Matching Question)	1	2	3	4
Proposal Writing:	Lectures on Proposal Writing	1	2	3	4
	Exercise #3 (Bibliographies)	1	2	3	4
	Exercise #4 (First Draft of Proposal)	1	2	3	4

		Very Useful	Useful	Useless	Very Useless
3. How useful is the seminar?		1	2	3	4
4. How useful is each of the following parts of the seminar:					
General Background:	Lectures on laws	1	2	3	4
	Lectures on U.S. Office of Education	1	2	3	4
	Lectures on RCU's	1	2	3	4
	Exercise #1	1	2	3	4
Sources of Information:	Lectures on ERIC	1	2	3	4
	Lectures on sources of information in Puerto Rico	1	2	3	4
	Exercise #2 (Matching Question)	1	2	3	4
Proposal Writing:	Lectures on Proposal Writing	1	2	3	4
	Exercise #3 (Bibliographies)	1	2	3	4
	Exercise #4 (First Draft of Proposal)	1	2	3	4

5. What recommendations would you make for improving the seminar?

APPENDIX F

TITLES OF PROPOSALS NOT DEVELOPED BEYOND FIRST DRAFTS

1. A Study of the Aptitudes, Skills and Personality Traits Needed for Successful Performance in the Technical Field.

2. An Appropriate Use of Instructional Media and Teaching Techniques in the Vocational Education of Economically and Socially Disadvantaged Out of School Youth 16 to 21 Years Old.

3. The Establishment of a Demonstration Project on Guidance and Counseling Services for the Disadvantaged Dropout at the Center for Educational Opportunities in Buchanan.

4. Anthropological Research into Environmental Factors Related to Occupational Orientation.

5. The Development of a Contemporary Industrial Arts Curriculum for Puerto Rico Senior High Schools.

6. Establishment of a Pilot Occupational Information Center for the Secondary Public Schools of Puerto Rico.

7. A Study to Determine the Adequacy of the Coguas Vocational Guidance Program in Helping Senior High School Students to Make Career Decisions.

8. A Training Program for Teacher Aides for Special Education Classes.